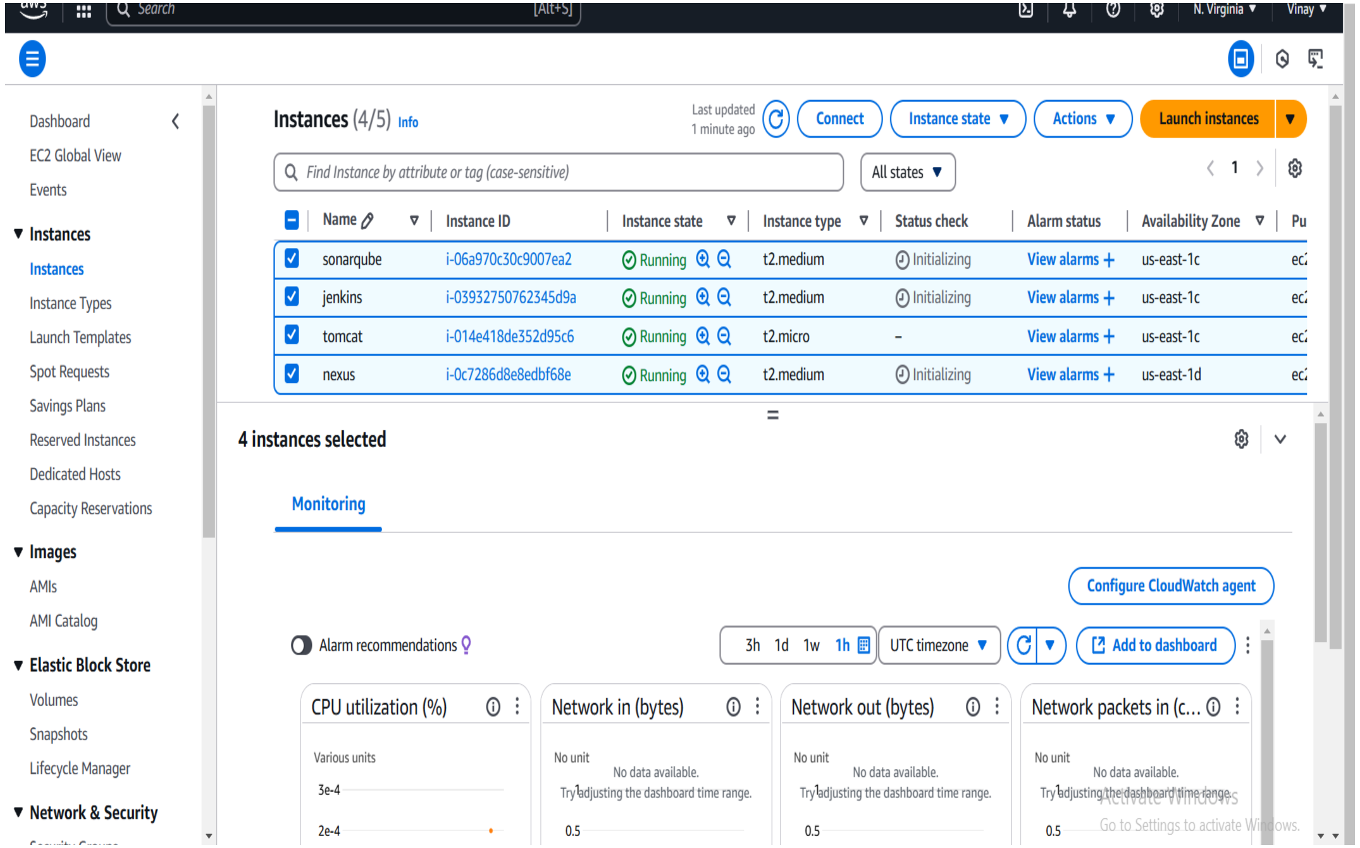
JENKINS

END TO END PIPELINE USING WEBHOOKS

1. PREREQUISITES

- **Jenkins**: Installed and running with plugins:
  - Git
  - SonarQube Scanner
  - Pipeline
  - Nexus Artifact Uploader
- **SonarQube**: Installed, running, and integrated with Jenkins.
- **Nexus Repository Manager**: Installed and running.
- A **GitHub Repository** containing your project code.



Instances (4/5) Info

Last updated 1 minute ago

☑	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Pu
☑	sonarqube	i-06a970c30c9007ea2	✓ Running	t2.medium	Initializing	View alarms +	us-east-1c	ec2
☑	jenkins	i-03932750762345d9a	✓ Running	t2.medium	Initializing	View alarms +	us-east-1c	ec2
☑	tomcat	i-014e418de352d95c6	✓ Running	t2.micro	–	View alarms +	us-east-1c	ec2
☑	nexus	i-0c7286d8e8edbf68e	✓ Running	t2.medium	Initializing	View alarms +	us-east-1d	ec2

4 instances selected

LAUNCHING OF JENKINS ,SONARQUBE,NEXUS, APACHETOMCAT SERVERS

2.SET UP JENKINS INTEGRATION

- a. **Integrate GitHub with Jenkins**
- Go to **Jenkins Dashboard > Manage Jenkins > Manage Plugins** and ensure the Git plugin is installed.
- Add GitHub credentials in Jenkins:
  - **Manage Jenkins > Credentials > System > Global credentials > Add Credentials.**
- Configure your GitHub repository:
  - Generate a webhook in GitHub to trigger Jenkins builds automatically.
  - b. **Integrate SonarQube with Jenkins**

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Install the **SonarQube Scanner** plugin in Jenkins.

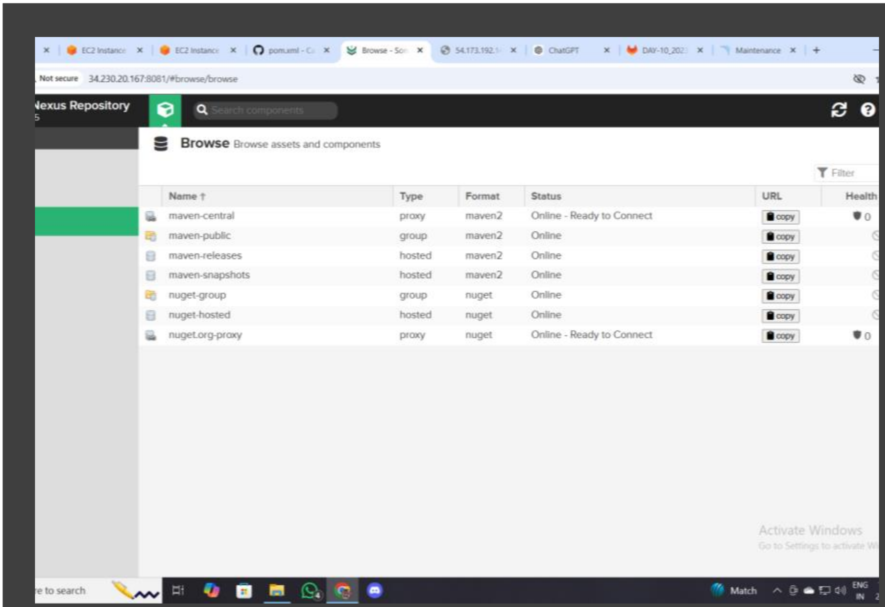
Configure SonarQube in Jenkins:

  - Go to **Manage Jenkins > Configure System > SonarQube servers.**
  - Add your SonarQube server URL and token.
  - c. **Integrate Nexus with Jenkins**

Install the **Nexus Artifact Uploader** plugin.

Configure credentials for Nexus in Jenkins:

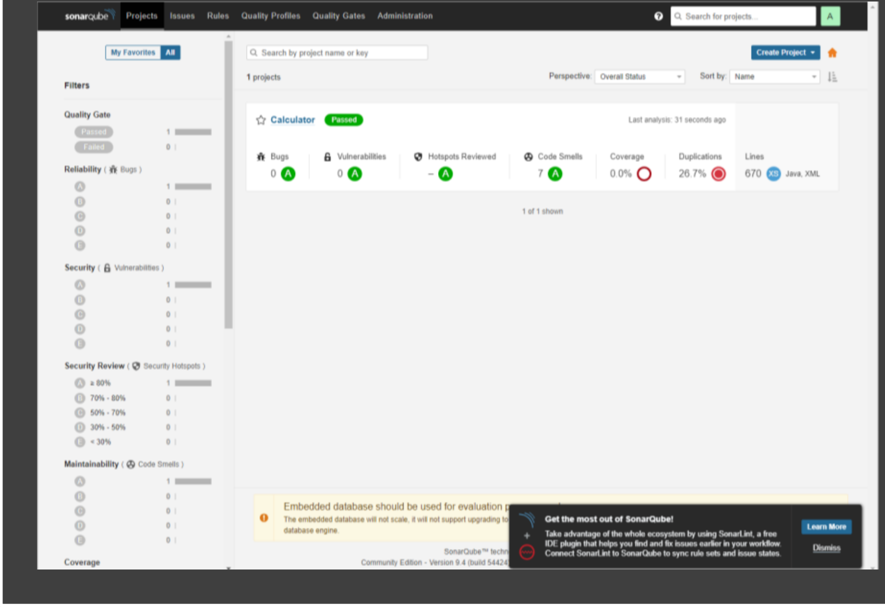
Go to **Manage Jenkins > Credentials** and add your Nexus credentials.



34.230.20.167:8081/#browse/browse

Browse Browse assets and components

Name ↑	Type	Format	Status	URL	Health
maven-central	proxy	maven2	Online - Ready to Connect	copy	0
maven-public	group	maven2	Online	copy	
maven-releases	hosted	maven2	Online	copy	
maven-snapshots	hosted	maven2	Online	copy	
nuget-group	group	nuget	Online	copy	
nuget-hosted	hosted	nuget	Online	copy	
nuget.org-proxy	proxy	nuget	Online - Ready to Connect	copy	0



1 projects

Perspective: Overall Status Sort by: Name

Calculator Passed Last analysis: 31 seconds ago

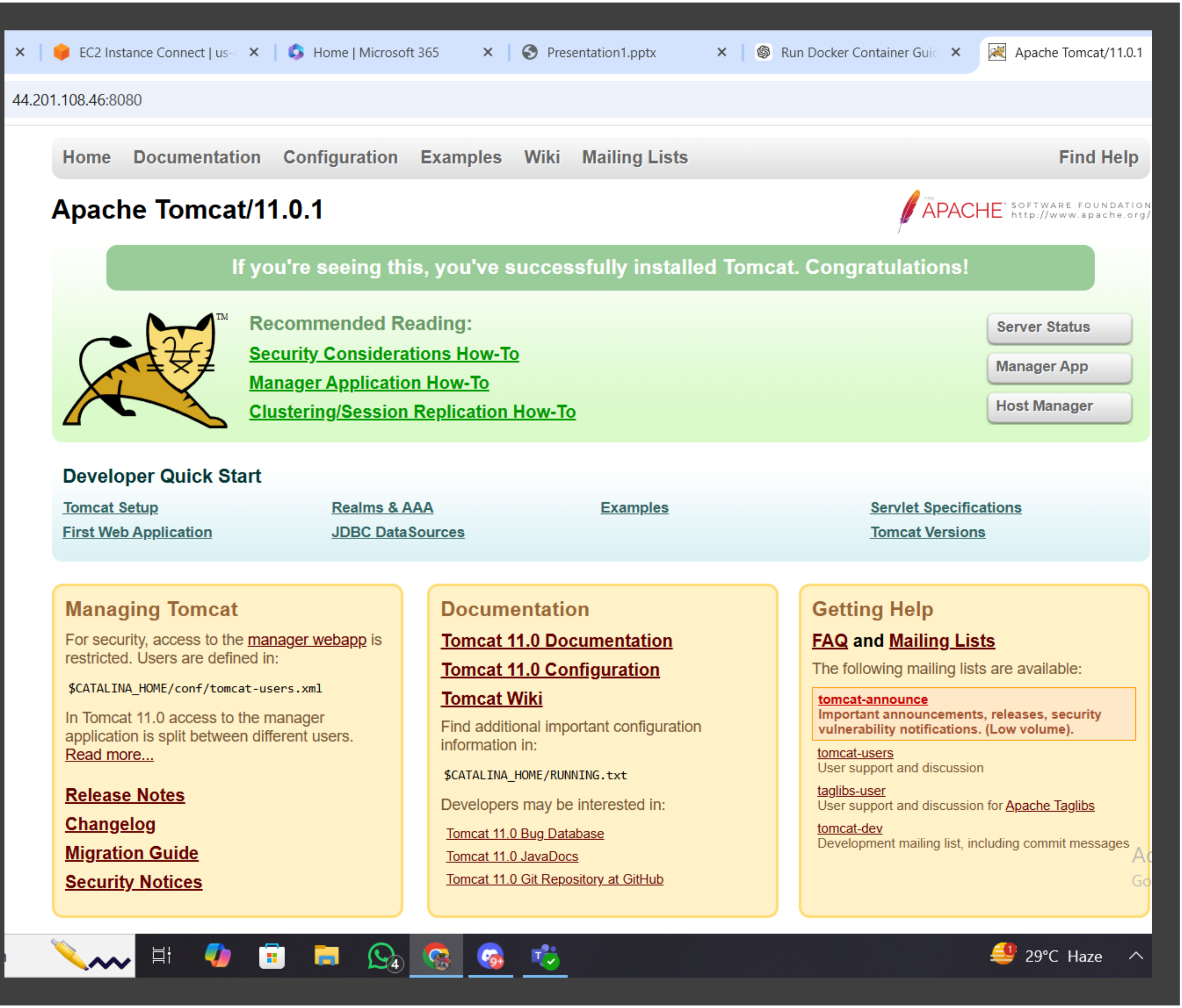
Bugs	Vulnerabilities	Hotspots Reviewed	Code Smells	Coverage	Duplications	Lines
0 A	0 A	– A	7 A	0.0%	26.7%	670 XS Java, XML

1 of 1 shown

Embedded database should be used for evaluation p
The embedded database will not scale, it will not support upgrading to
database engine.

SonarQube™ techn
Community Edition - Version 9.4 (build 54424)

Get the most out of SonarQube!
Take advantage of the whole ecosystem by using SonarLint, a free IDE plugin that helps you find and fix issues earlier in your workflow. Connect SonarLint to SonarQube to sync rule sets and issue states.



44.201.108.46:8080

Apache Tomcat/11.0.1

If you're seeing this, you've successfully installed Tomcat. Congratulations!

Recommended Reading:
Security Considerations How-To
Manager Application How-To
Clustering/Session Replication How-To

Developer Quick Start

Tomcat Setup
First Web Application
Realms & AAA
JDBC DataSources
Examples
Servlet Specifications
Tomcat Versions

Managing Tomcat

For security, access to the manager webapp is restricted. Users are defined in:

```
$CATALINA_HOME/conf/tomcat-users.xml
```

In Tomcat 11.0 access to the manager application is split between different users. Read more...

Release Notes
Changelog
Migration Guide
Security Notices

Documentation

Tomcat 11.0 Documentation
Tomcat 11.0 Configuration
Tomcat Wiki

Find additional important configuration information in:

```
$CATALINA_HOME/RUNNING.txt
```

Developers may be interested in:

Tomcat 11.0 Bug Database
Tomcat 11.0 JavaDocs
Tomcat 11.0 Git Repository at GitHub

Getting Help

FAQ and Mailing Lists

The following mailing lists are available:

tomcat-announce
Important announcements, releases, security vulnerability notifications. (Low volume).

tomcat-users
User support and discussion

taglibs-user
User support and discussion for Apache Taglibs

tomcat-dev
Development mailing list, including commit messages

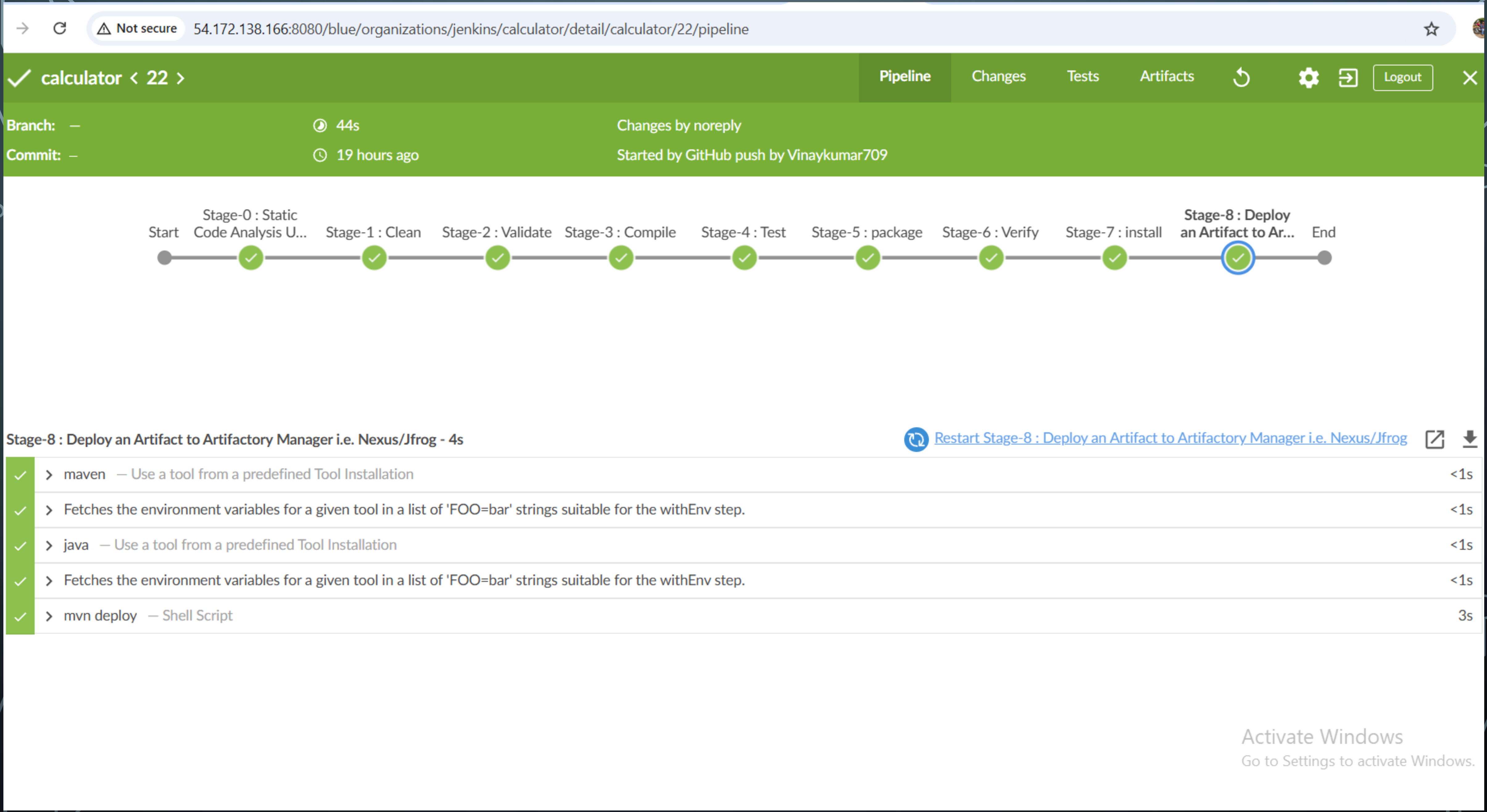
3. CREATE THE JENKINS PIPELINE

4. CONFIGURE GITHUB WEBHOOK

- GO TO YOUR GITHUB REPOSITORY > **SETTINGS > WEBHOOKS > ADD WEBHOOK**.
- ADD THE JENKINS URL FOLLOWED BY /GITHUB-WEBHOOK/ (E.G., HTTP://<JENKINS-URL>:8080/GITHUB-WEBHOOK/).
- CHOOSE **APPLICATION**/**JSON** AS THE CONTENT TYPE.
- SET THE TRIGGER TO PUSH EVENTS.

5. RUN THE PIPELINE

- Trigger the pipeline manually or push changes to the GitHub repository to start the pipeline.
- Monitor the stages in Jenkins:
  - **Checkout Code**: Pulls the latest code.
  - **Code Quality Analysis**: Runs SonarQube checks.
  - **Build and Package**: Uses Maven to build the artifact.
  - **Upload Artifact to Nexus**: Pushes the built artifact to Nexus.



Branch: –

Commit: –

44s

19 hours ago

Changes by noreply

Started by GitHub push by Vinaykumar709

Stage-8 : Deploy an Artifact to Artifactory Manager i.e. Nexus/Jfrog - 4s

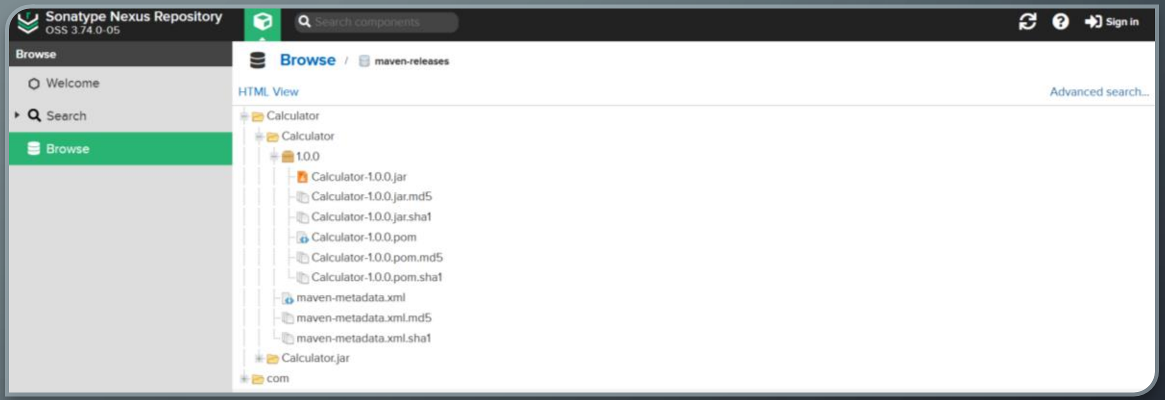
Restart Stage-8 : Deploy an Artifact to Artifactory Manager i.e. Nexus/Jfrog

```
✓ > maven — Use a tool from a predefined Tool Installation                                             <1s
✓ > Fetches the environment variables for a given tool in a list of 'FOO=bar' strings suitable for the withEnv step.   <1s
✓ > java — Use a tool from a predefined Tool Installation                                              <1s
✓ > Fetches the environment variables for a given tool in a list of 'FOO=bar' strings suitable for the withEnv step.   <1s
✓ > mvn deploy — Shell Script                                                                          3s
```

Activate Windows
Go to Settings to activate Windows.

6. VALIDATE RESULTS

- **SonarQube:** Check the code quality results on your SonarQube dashboard.
- **Nexus:** Verify that the artifact is uploaded to the correct repository.



```
Calculator
  Calculator
    1.0.0
      Calculator-1.0.0.jar
      Calculator-1.0.0.jar.md5
      Calculator-1.0.0.jar.sha1
      Calculator-1.0.0.pom
      Calculator-1.0.0.pom.md5
      Calculator-1.0.0.pom.sha1
    maven-metadata.xml
    maven-metadata.xml.md5
    maven-metadata.xml.sha1
  Calculator.jar
com
```

- **7. Optional Enhancements**
- Add **email notifications** for build success or failure.
- Use a **Docker-based setup** for easier environment management.
- Add **testing stages** (e.g., unit or integration tests).